

REMARKS

Reconsideration and allowance are respectfully requested in light of the above amendments and the following remarks.

Claim 1 has been amended to recite features described in claims 4 and 5 and the specification on page 13, lines 21-25. Claim 3 has been amended to recite a feature described in the specification on page 12, line 13. Claims 4 and 5 have been canceled.

Claims 1-8 were rejected, under 35 USC §103(a), as being unpatentable over Bates et al. (US 5,338,625) in view of Rezvani et al. (US 6,633,073). To the extent these rejections may be deemed applicable to the amended claims, the Applicants respectfully traverse.

According to claim 1, a first diffusion layer containing an N-type impurity is formed between the region of a semiconductor substrate where a solid state battery is mounted (hereinafter "the solid state battery region") and the region of the semiconductor substrate where an integrated circuit is mounted (hereinafter "the IC region"), and a second diffusion layer is formed below the solid state battery region. Since the first diffusion layer and the second diffusion layer overlap each other, the solid state battery region is completely surrounded by the first diffusion layer and the second diffusion layer.

Further, the first diffusion layer and the second diffusion layer have a positive potential not less than the potential of the positive electrode with respect to the negative electrode when the solid state battery is being charged and discharged. Thus, cations contributing to the charging and discharging of the solid state battery are electrically repulsive to the first diffusion layer and the second diffusion layer and are, therefore, prevented from diffusing into the IC region (see specification page 10, line 19, through page 11, line 7).

In Rezvani, an n-well is provided between a quiet region and a noisy region to isolate the noise-sensitive quiet region from noise generated in the noisy region. The Office Action proposes that Rezvani's quiet region corresponds to the solid state battery region of the claimed invention and that Rezvani's n-well corresponds to the claimed second diffusion layer. Also, in Rezvani, an n+ region doped with a larger amount of an N-type impurity is provided on top of the n-well. The Office Action proposes that the n+ region corresponds to the first diffusion layer of the claimed invention.

However, Rezvani does not disclose or suggest mounting a solid state battery on a semiconductor substrate. Also, Rezvani does not disclose or suggest providing an n-well below the quiet region. Further, Rezvani does not disclose or suggest providing

the n-well over the entire semiconductor substrate between the quiet region and the noisy region.

In Rezvani, the purpose of providing the n-well is to block noise and, hence, the quiet region is not completely isolated from the noisy region. Therefore, even if the n-well of Rezvani were provided between the solid state battery region and the IC region, it would not be possible to prevent cations contributing to the charging and discharging of the solid state battery from diffusing into the IC region. That is, the effect achieved by the claimed invention of preventing cation diffusion into the IC region is not suggested by the applied references.

Moreover, the Office Action's proposed motivation for modifying Bates' structure with the teachings of Rezvani is to integrate a battery onto the substrate of an integrated circuit such that the battery is isolated from the electronic noise produced by the integrated circuit (see Office Action page 3, last three lines, and page 4, first two lines). However, the Office Action fails to indicate why a skilled artisan would be motivated to prevent noise produced by an integrated circuit from reaching a battery. A battery tends to: (1) filter noise very effectively and (2) be operationally unaffected by noise. Thus, there is no support for the Office Action's proposal that a skilled artisan would find motivation in the teachings of Rezvani

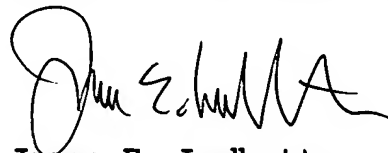
to isolate a battery from the noise produced by an integrated circuit.

Accordingly, the Applicants respectfully submit that the applied references, considered alone or together, do not suggest the subject matter defined by claim 1. Therefore, allowance of claim 1 and all claims dependent therefrom is warranted.

In view of the above, it is submitted that this application is in condition for allowance and a notice to that effect is respectfully solicited.

If any issues remain which may best be resolved through a telephone communication, the Examiner is requested to telephone the undersigned at the local Washington, D.C. telephone number listed below.

Respectfully submitted,



James E. Ledbetter
Registration No. 28,732

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JEL/DWW/att

Attorney Docket No. L7990.05102
STEVENS DAVIS, MILLER & MOSHER, L.L.P.
1615 L Street, N.W., Suite 850
P.O. Box 34387
Washington, D.C. 20043-4387
Telephone: (202) 785-0100
Facsimile: (202) 408-5200